

# Minutes of the TITAN Meeting

Held on the 23th of April, 2009

**Present:** Maxime Brodeur, Thomas Brunner, Paul Delheij, Jens Dilling, Stephan Ettenauer, Melvin Good, Alain Lapierre, and Ryan Ringle

## EBIT

### x) *Vacuum:*

A leak in the Be window on the south side was found. Although it appears to be relatively big, it does not seem to change the pressure too much when the system is warm.

Pressure (e-gun closest):

$10^{-7}$  mbar warm

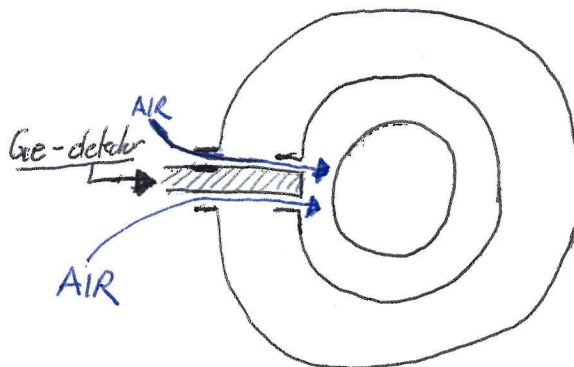
$10^{-8}$  mbar when below 0 C (freeze out water),  
ca.  $2 \cdot 10^{-9}$  mbar cold

Since there is a big decrease around the freezing point of water, baking to get out the water is an option.

It is also speculated that maybe some air could pass through the holes in the shield (see figure).

A simple test of this explanation could be done

by moving the Ge-detector in and out: When the detector itself is not blocking the hole, one should observe less charge bred ions originating from the residual gas. If that's indeed the case we will need to close the shield.



Immediate steps: look for other leaks

### x) *Faraday cage*

Mel completed the concept for the Faraday cage. It will be shown to Mike and then sent back to the design office.

### x) *MCP*

The reason why the MCP's phosphor screen did not work was found in a broken cable. It is rewired, and the phosphor screen is now working again.

### x) *Ion Source*

The concept is now ok and will be double-checked with Mike, Don, and Franco. A meeting to discuss everything should be set up before RNB.

## **CPET**

Titanium vacuum tube will be shipped to us in the next weeks. The summer student will test it.

(Note: the summer student will need a computer. Max will check that and backup Chris' data)

## **RFQ**

x) Reverse extraction was tested with ions from our source and works now.

x) Ceramic lines for gas flow would allow installing gas bottles outside the RFQ HV cage and big gas bottles could be used.

## **MPET**

x) *Trapping Scheme*

Maxime made proposals how to change the trapping scheme: He has circled around a more detailed, but in summary the PLC modules which we are currently using to change the trapping bias are slow, have noise-oscillations on their output and will not lead to perfectly symmetric trapping potential (for instance because each cap is connected to a different PLC output). Max suggests replacing the PLC modules with combinations of new power supplies and switches.

A rough prize estimate shows 200\$ per power supply and ca. 500\$ for a 500 V switch. Maxime will order the respective parts next week.

The current PPG cycle will be kept in place to allow moving back to the old system.

It is also considered to replace the power supply for the pulse drift tube after the RFQ with a more stable one.

x) *Vacuum*

To improve the vacuum in the MPET we would like to bake the vacuum chamber, but we need to make sure that the trap (and the wiring) will not be damaged by the baking process. Thus, we would like to bake at the lowest possible temperature, and Stephan will search for the activation temperature for titanium.

x) *Simulation for Lorentz-Steerer*

Maxime is performing simulations with the Lorentz-Steerer to investigate the relativistic corrections.

## **mr-TOF**

Thomas was reporting from the test run of mr-TOF in Munich which was dominated by troubles with getting ions out of the gas stopper cell. But it was possible to get it running with ions directly injected into the RFQ before the mr-TOR. The efficiency of this procedure is not known yet.

Thomas thinks that they want to keep the mr-TOF in Germany until the end of the year.